DOCUMENT RESUME

ED 309 328 CG 021 772

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TITLE Attributions, Outcome Expectations, Locus of Control and Daily Hassles.
PUB DATE Apr 89
NOTE 21p.; Paper presented at the Annual Meeting of the Southwestern Psychological Association (35th, Houston, TX, April 13-15, 1989).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Attribution Theory; College Students; Coping; *Depression (Psychology); *Expectation; Higher Education; *Locus of Control; *Stress Variables

ABSTRACT

Previous research has indicated that locus of control acts to moderate the effects of stressful events. In this study the role of depressive attributions, negative outcome expectancies, and internal locus of control and their interactions with minor negative events in predicting symptoms of psychological distress were examined. Subjects (N=131) were college students; a short-term longitudinal design was used. Results indicated that depressive attributions and moderately internal (rather than extremely internal) locus of control expectancies acted to buffer the effects of minor negative events. In addition, evidence was not supportive of the confluence hypothesis although the finding that expectancies of negative outcomes were related to symptoms is consistent with both the confluence hypothesis and the learned helplessness model of depression. Results indicated that, in this sample, vulnerability to stress was reduced for individuals with moderately low expectancies of control in combination with depressive attributions for past events. Although these cognitions (depressive attributions, and lower internal control expectancies) may be effective in coping with daily hassles, they may increase the risk of clinical depression if major life events, rather than daily hassles, are encountered. (Author/ABL)

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ATTRIBUTIONS, OUTCOME EXPECTATIONS, LOCUS OF CONTROL AND DAILY HASSLES

Robert C. Cummins

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ABSTRACT

The role of depressive attributions, negative outcome expectancies and internal locus of control and their interactions with minor negative events in predicting symptoms of psychological distress was investigated with a sample of 131 students in a short-term longitudinal design. Contrary to prediction, results indicate that depressive attributions and moderately internal (rather than extremely internal) locus of control expectancies act to buffer the effects of minor negative events. In addition, evidence is not supportive of the confluence hypothesis (Riskind, et.al., 1987) although the finding that expectancies of negative outcomes is related to symptoms is consistent with both the confluence hypothesis and the learned helplessness model of depression. Results are discussed in terms of the role of various cognitions in coping with minor life events as contrasted with major life events.

Attributions, Outcome Expectancies, Locus of Control and Daily Hassles

The reformulated theory of learned helplessness (Abramson, Seligman, & Teasdale, 1978) postulates that depressive attributional style (the attribution of negative events to internal, stable, and global causal factors) constitutes a predisposition to depression. Several recent reviews have reached somewhat different conclusions concerning evidence for the learned helplessness theory. Sweeney, Anderson, and Barley (1986) conducted a meta-analysis of 104 studies and concluded that attributional style (the dimensions of internality, stability and globality, as well as attributional factors of ability and luck) are significantly correlated with depressive symptoms. However, most of the studies reviewed were not longitudinal and therefore the issue of whether these attributions are causally linked to depression is unanswered. Riskind, Rholes, Brannon, & Burdock (1987) point out that although several longitudinal studies (e.g., Cutrona, 1983; Golin, Sweeney & Shaeffer, 1981) have found results supportive of learned helplessness theory, other studies (e.g., Lewinsohn, Steinmetz, Larson & Franklin, 1981; Peterson, Schwartz & Seligman, 1981) failed to find that causal attributions predicted depression.

Brewin (1985) reviewed the evidence on various models concerning the relationship between attributions and depression and concluded that the two primary models (the onset model and the vulnerability model) associated with learned helplessness theory receive little support, although models which posited a direct relation of attribution to

depressed mood (without suggesting that attributions are important because of their relation to specific events in people's lives) were supported by the studies reviewed. Recent studies however indicate that attributional style in combination with stress predicts the onset of depressive symptoms (as noted in Crocker, Alloy & Kayne, 1988). Riskind et al. (1987) hypothesize that one way to account for the mixed results concerning the predictive capacity of attributional style is that it is contingent on negative outcome expectations. That is, the reformulated helplessness model assumes that attributions create expectations. According to their confluence hypothesis (Riskind, et al. 1987, p. 350), negative attributional style together with negative outcome expectations represents the highest risk of (future) depressive symptoms.

There have been several studies which also indicate that locus of control acts to moderate the effects of stressful events (e.g. Johnson and Sarason, 1978; Lefcourt, 1981; Krause & Stryker, 1984). In fact, Cohen & Edwards (in press) suggest that locus of control is the individual difference variable which most consistently acts to moderate the effects of stressful life events on stress-related symptoms; however results regarding the moderating effect of internal locus of control are mixed. A particularly interesting example of these mixed results is the study by Krause & Stryker (1984) who found the predicted interaction between locus of control and stressful events indicating that men with internal locus of control expectations respond more adequately to stress; but they also found that men who were extremely internal were no better at coping with stress than extreme externals.

They speculate that extreme internals may not undertake appropriate coping actions because of paralyzing guilt feelings, an interpretation consistent with learned helplessness theory. A direct test of this interpretation would seem to involve the interaction of "depressive" attributions, locus of control, and stressful events.

Based on the brief review of the literature above, the following predictions are made: 1) depressive attributions will increase vulnerability to stressful events (as per learned helplessness theory); 2) internal locus of control will buffer the effects of stress; 3) depressive attributions in combination with negative outcome expectations will increase vulnerability to stress above that of either cognition alone (the confluence hypothesis); and 4) locus of control will interact with depressive attributions to increase vulnerability to stress.

METHOD

Sample

One hundred and thirty-one business administration students at a metropolitan university in southwestern United States, 75 men and 56 women, participated in the study for course credit. Their ages ranged from 20 to 60 years (mean=29.6 years), 52% were married, and 80% were employed. Participants completed a number of questionnaire measures at three different testings at approximately one month intervals. Measures

completed at the first testing included the Cognitions Questionnaire (CQ). At the second testing a measure of locus of control was administered. At the third testing, the Daily Hassles Scale and the Psychiatric Symptoms Index were completed.

Measures

Chronic stress. The Daily Hassles Scale (Kanner, et al., 1981) was used to measure ongoing, chronic stress. The scale consists of 117 events that a person might experience in daily life. These items include: "concerns about job security", "unchallenging work", "misplacing or losing things", "inconsiderate smokers", and "auto maintenance problems". The respondent was instructed to recall if the event had occurred in the past month and, if so, to check that item. They then rated those checked items in terms of intensity of upset from 0 (it didn't upset me at all) to 3 (it was very upsetting). A total score was obtained by summing across all items. Test-retest reliability of the Daily Hassles Scale was reported by Kanner et al. (1981) to be an average correlation of .79 over a 9 month period indicating that it is measuring chronic stress. The Daily Hassles Scale has been shown to be a significant predictor of psychological and somatic health variables (e.g., Burke & Martin, 1985; DeLongis, et al., 1981).

Symptoms of distress. The Psychiatric Symptom Index (PSI) is a 29 item scale (taken from the longer Symptom Distress Checklist) designed for use in the general, non-patient adult population (Derogatis et al., 1974). Factor analysis indicates items which reflect depression, anxiety, anger and cognitive disturbance (Ilfield, 1976). Respondents were asked to indicate the frequency of the item's occurrence in the past month on a 5 point scale (ranging from never to very often). Scores were computed by summing across all items. Example items include: "Having trouble getting to sleep or staying asleep," and "Have trouble concentrating." Previous research has demonstrated that this scale has a sensitivity to low levels of symptoms in normal populations (Ilfeld, 1977).

Cognitions. The Cognitions Questionnaire (Fennel & Campbell, 1984) was used to measure "depressive" causal attributions (high scorers blame unpleasant events to their own qualities and attribute pleasant events to other people or circumstances) and future expectations (high scorers see unpleasant events as extending into the future and likely to recur and pleasant events as short-lived and unlikely to recur). The Cognitions Questionnaire consists of 8 brief scenarios with each scenario including questions with 4 alternative answers for each response dimension cited above (plus two others not included in this study). Scores are determined on the basis of a coding system determined by expert judges who categorized responses as depressive or non-depressive. The two scales used in the present study discriminated between depressed and non-depressed psychiatric and community samples (Fennel & Campbell, 1984).

Locus of Control The Levenson measure of locus of control (Levenson, 1980) was used to measure internal locus of control. This measure consists of 24 items in a Likert-type 6 point formal with 8 of those items measuring internal locus of control. All items are phrased in terms of the respondent rather than people in general, e.g. "When I make plans, I am almost certain to make them work." Reliability and validity information are presented in Levenson (1974).

RESULTS

The correlation matrix of study variables is shown in Table 1. Note that internal locus of control is directly related to symptoms ($p < .05$) and inversely related to stressful events. Perhaps these unpredicted but somewhat surprising results are related to the high degree of internality of the study sample. The mean of internal locus of control of the present study (40.51) is almost one standard deviation greater than the mean (35.48) found in Levenson's (1974) study.

Insert Table I about here

In order to test the hypotheses, two hierarchical regression analyses were performed with psychiatric symptoms as the dependent variable and predictors entered in the following order: stressful events (Daily Hassles), dysfunctional attributions, either locus of control or expectancies of negative outcomes, the 2-way interactions (stress x attributions, stress x LOC or stress x expectancies of negative outcomes, and attributions x LOC or attributions x expectancies) and then the 3-way interaction. A predicted values approach (Cohen, P. & Cohen, J., 1975) and a subsidiary analysis which split the sample at the median and calculated simple regressions yielded similar results in terms of revealing the nature of significant 2-way interaction effects. The latter are reported here for ease of presentation.

The prediction that depressive attributions increase vulnerability to stressful events is not supported; in fact the results indicate that such attributions act to buffer the impact of chronic stress! That is, although the stress x attributions interaction is significant (Table II), the subsidiary median split analysis shows that negative events are unrelated to symptoms ($F=.26$) for those above the median on depressive attributions, whereas for those below the median negative events are strongly associated with symptoms ($F=13.30$, $p \leq .001$).

The results indicate that the interaction of internal locus of control is highly significant ($p < .001$, Table III) but also in the direction opposite to that predicted since the regression of symptoms on negative events for internals above the median is highly significant, $F=18.36$, $p < .0001$) whereas for those below the median, negative events are unrelated to symptoms ($F=.42$). Thus, internal locus of control, in this sample, increases vulnerability to stress rather than acting as a stress buffer as predicted.

The 3-way interaction between stress, attributions, and expectancies of negative outcomes is not statistically significant (Table 2, $F=2.04$, $p=.15$) therefore the confluence hypothesis (Riskind, 1987) is not supported; however, the 3-way interaction involving locus of control (stress x attributions x LOC) does significantly predict psychiatric symptoms ($p < .05$, Table 3). As shown in Figure 1, the stress-symptom relationship is weakest for low internals with high levels of "depressive" attributions, whereas for other combinations of locus of control and depressive attributions the stress-strain relationship is fairly uniform. Thus Figure 1 indicates that the combination of low internality and "depressive" attributions acts to "buffer" the effects of daily hassles on symptoms.

Finally, note that expectancies of negative outcomes predict psychiatric symptoms ($p < .05$, Table II). Although this main effect was not hypothesized, it is consistent with learned helplessness theory which assumes that such expectations are created by attributions, i.e., that expectations play what amounts to the proximal role in causing depressive symptoms (Riskind, et al. 1987, p. 350).

DISCUSSION

The results of the present study indicate that in the present sample, general expectancies of internal control are associated with stronger effects of chronic stress on psychiatric symptoms. Given the interpretation that this sample is extremely internal (note the elevated mean in Table 1 discussed in the results section), these surprising results are similar to Krause & Stryker's (1984) study cited in the introduction which found that extreme internals were as vulnerable to stress as extreme externals. Note that Krause & Stryker's (1984) interpretation of this result as arising from paralyzing guilt does not seem applicable here, since the "depressive-type" attributions act to buffer the effects of stress rather than increase vulnerability to stress. This latter result and the significant 3-way interaction between stress, internal locus of control, and depressive attributions indicate that for this sample, vulnerability to stress is reduced for individuals with (moderately) low expectancies of control in combination with depressive attributions for past events. It should be noted that although these cognitions (depressive attributions, lower internal control expectancies) may be effective in coping with daily hassles, they may increase the risk of clinical depression if major life events (rather than daily hassles) are encountered. That is, ways of coping with daily stressors which may work for individuals with relatively high expectancies of internal control may also increase vulnerability

to major life events. This possibility seems consistent with Beck's (1983) observations concerning the autonomous mode of depression, where individuals may be functioning with high initiative and then suddenly feel helpless/hopeless. For these depressives, depressive attributions in combination with moderately low expectancies of internal control may have allowed high level functioning (for coping with daily hassles) but increased their vulnerability to major life events. Further research is needed to test this interpretation.

Caution should be taken in interpreting the non-significant 3-way interaction between stress, attributions, and expectancies of negative outcomes ($p=.15$). The lack of statistical power (Robins, 1988) and the use of a general measure of psychopathology (The Psychiatric Symptoms Index) rather than a measure of depressive symptoms alone both argue against interpreting this non-significant result as evidence for rejecting the confluence hypothesis. Also, Fennel and Campbell's (1984) measure of attributions and expectancies are highly correlated ($r=.72$, Table 1) perhaps partly because of method specificity since they are subscales of the same questionnaire. Such a high correlation would seem to make it difficult for an interaction term employing these two measures to reach statistical significance. Interestingly, results of the present study indicate a main effect for expectancies of negative outcomes (Table 2), a result that Riskind et al. (1987) do not find with their measure of negative expectations even though this main effect is consistent with learned helplessness theory. Perhaps their measure of negative expectancies (The Subjective Probability Questionnaire

developed by Lewinsohn et al., 1981) which includes items such as "I will be able to make friends with people I really like" confounds expectations about future outcomes with expectations of contingencies (or non-contingency) of one's own actions with reinforcement events (i.e., locus of control).

As mentioned above, the dependent variable in the present study is a general measure of symptoms rather than depressive symptoms, which is the target variable for both learned helplessness theory and the confluence hypothesis. As Gotlib (1984) found, however, general psychopathology and depression are strongly associated, at least in college students. The results of this study indicate that attributions may be antecedents of any emotionally deviant (Thoits, 1985) reaction to stress (e.g., anxiety, hostility), as suggested by Robins (1988).

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Table I. Descriptive Statistics and Correlations of Study Variables

		M	SD	1	2	3	4	5
1.	DH	50.86	37.40		.08	.14	-.30[b]	.25[b]
2.	CQAT	7.46	2.28		(.64)	.08	-.01	.15
3.	CQFUT	2.45	1.40			(.84)	.00	.21[a]
4.	LOC	40.51	6.46				(.64)	.20[a]
5.	PSI	62.01	18.28					(.93)

DH = Daily Hassles
CQAT = Cognitions Questionnaire, Attributions
CQFUT = Cogntions Questionnaire, Future Expectancies
LOC = Locus of Control (Internal)
PSI = Psychiatric Symptoms Index

[a] $p < .05$
[b] $p < .01$

Cronbach alpha estimates of reliability are in parentheses.

Table II. Depressive Attributions, LOC, and Stress as Predictors of Symptoms

	F	ΔR^2	Final Multiple R^2
DH (A)	10.89[b]	.064	
CQAT (B)	2.72	.105	
LOC (C)	14.26[c]	.084	
A x B	4.41[a]	.026	
A x C	11.99[c]	.071	
B x C	.16	.001	
A x B x C	6.32[a]	.038	.301

Note: DH = Daily Hassles
CQAT = Cognitions Questionnaire, Attribution
LOC = Locus of Control (internal)

[a] $p \leq .05$
[b] $p \leq .01$
[c] $p \leq .001$

Table III. Depressive Attributions, Negative Expectancies, and Stress as Predictors of Symptoms

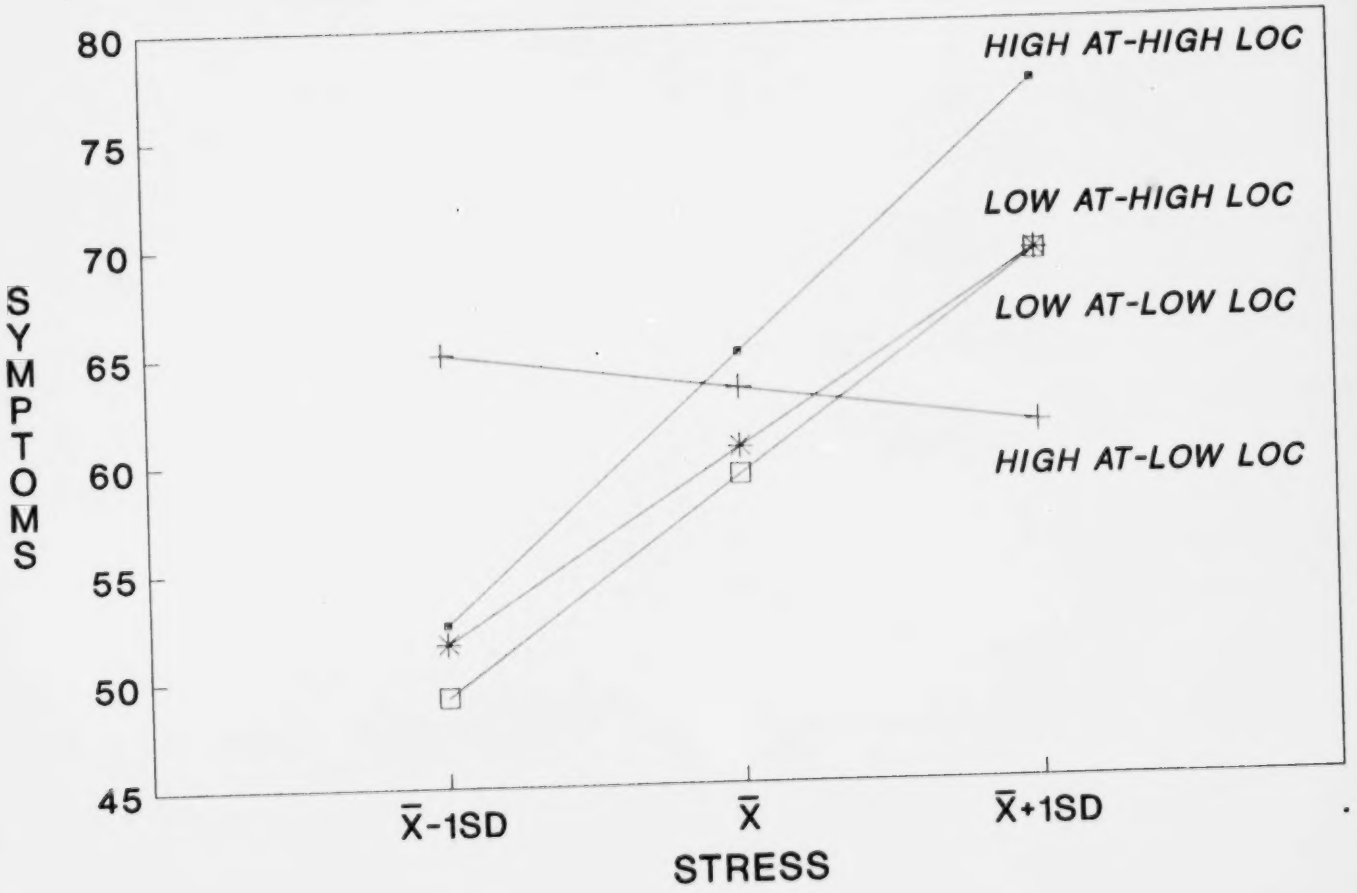
	F	ΔR^2	Final Multiple R^2
DH (A)	9.00[c]	.065	
CQAT (B)	2.24	.016	
CQFUT (C)	3.65[a]	.026	
A x B	2.98[a]	.021	
A x C	.13	.001	
B x C	1.45	.010	
A x B x C	2.04	.015	.154

Note: DH = Daily Hassles
CQAT = Cognitions Questionnaire, Attributions
CQFUT = Cognitions Questionnaire, Future Expectancies

[a] $p < .10$
[b] $p < .05$
[c] $p < .01$

Figure Caption

Figure 1. Regression lines predicting symptoms from daily hassles at low and high levels (±1 SD) of depressive attributiosn (AT) and low and high levels of internal locus of control (LOC).


80
75
70
65
60
55
50
45
SYMPTOMS
HIGH AT-HIGH LOC
LOW AT-HIGH LOC
LOW AT-LOW LOC
HIGH AT-LOW LOC
X̄-1SD
X̄
X̄+1SD
STRESS